BEFORE THE BOARD OF OIL, GAS AND MINING
DEPARTMENT OF NATURAL RESOURCES
STATE OF UTAH

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IN THE MATTER OF THE FIVE YEAR PERMIT RENEWAL, CO-OP MINING COMPANY, BEAR CANYON MINE, EMERY COUNTY, UTAH	:	RESPONSE OF THE DIVISION OF OIL, GAS AND MINING TO WATER USERS' PROFFER OF EVIDENCE
	:	DOCKET NO. 95-025 CAUSE NO. ACT/015/025
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COMES NOW the Division of Oil, Gas and Mining (the "Division") and offers its response to the PROFFER OF WATER USERS PER REQUEST OF THE BOARD filed December 24, 1997 by Castle Valley Special Service District ("Castle Valley"), North Emery Water Users Association ("NEWUA") and Huntington-Cleveland Irrigation Company ("Huntington Cleveland") (collectively, "Water Users").

The Board of Oil, Gas and Mining ("Board") requested that the Water Users provide the Board with evidence that fell into two categories. First, evidence which was excluded from the Tank Seam hearing by restrictions imposed by the Board. The second category of evidence is evidence which demonstrated that the continued mining or another event at the site had the capability to invalidate the determination that no hydrological connection existed between the mine and the Water Users' springs. After looking at the proffered evidence, the Division believes a number of issues, including hydrological connection of the mine with Water Users' springs, were fully and fairly litigated at the Tank Seam hearing and no evidence has been presented to

suggest that mining or another event at the site has invalidated that determination.

To avoid needless duplication, the Division incorporates by reference all previous arguments made to the Board on this issue.

ARGUMENT

I. THE WATER USERS HAVE FAILED TO SHOW THAT THE BOARD'S INITIAL RESTRICTIONS MATERIALLY ALTERED THEIR PRESENTATION

The Water Users' proffer does not demonstrate that the Board's initial restrictions substantially altered their presentation. Any analysis of the Board's restrictions must first consider that the Board attempted to correct any limitation imposed upon the Water Users. After considering the Water Users repeated argument that the Tank Seam revision hearing had to consider the existing impact of the Blind Canyon Seam operation, Board Chairman Dave Lauriski stated, "All right. We'll go back on the record. We're going to go ahead and let you proceed, and we've noted your comments relative to what this Board should be considering, and it will consider all the evidence when we recess to consider this case. So, if you want to go ahead Mr. Smith, you may proceed." Transcript Tank Seam hearing at 335 (hereinafter T. at__). Thus, the Water Users had the chance to correct any deficiencies caused by the initial restrictions. Their failure to correct any alleged deficiencies at the hearing must cut against their argument that the Tank Seam hearing was unfair.

Another global reason for finding that the Water Users were not unfairly restricted in their presentation is that the transcript is devoid of any incident of the Water Users offering evidence

which is disallowed. Consequently, the transcript demonstrates that the Water Users both failed to offer any new evidence when presented the opportunity by Chairman Lauriski or establish for the record how they were being restricted. Moreover, the Division believes that an examination of the transcript demonstrates that the Water Users were not prevented from presenting their entire case in any meaningful way. The Water Users' proffer does not demonstrate that the hearing was unfair.

The first example of evidence restricted by the Board cited in the Water Users' proffer is an incorrect assertion. They claim that evidence of groundwater flow elevations for the Blackhawk Formation/Spring Canyon Sandstone aquifer was excluded. The Water Users state, "[t]his would have established that Co-op has been intercepting the groundwater table as mining continues northward". Proffer at 3 (EXHIBIT A). However, the Water Users' expert S. Bryce Montgomery testified, "[a]nd at the discharge point where the springs are, the potentiometric surface is very low, and the formation directly above it is not saturated. But as you get back northward into the mountain range, the Gentry Mountain Range to the north, THEN you have a thicker saturated section, and that section actually reaches up into the Blackhawk Formation which contains the coal beds. So when they mine the coal they intercept the groundwater." T. at 106. Moreover, the transcript contains numerous other examples on this subject. E.g. T. at 121, 128, 157. Contrary to their assertion, the Water Users were allowed to present evidence on this matter and, thus, the matter was fully and fairly litigated.

The Water Users' second attempt to demonstrate that evidence was restricted was to allege that geochemical, radiometric and stable isotope evidence was not submitted. Co-op

clearly offered such evidence in the hearing.. E.g. T. at 247, 287-88. Interestingly, the Water Users tried to support their theory by attempting to use that evidence. *See* T. at 247. Logically, if the Board allowed Co-op to use such evidence, the Water Users would have been allowed to present such evidence. Thus, the Water Users' claim that they refrained from presenting such evidence by the Board's restrictions lacks credibility. Nothing in the transcript supports such an assertion.

The Water Users' third example is so vague that a proper response is difficult. They state, "[e]vidence that mining in the area has in the past dewatered a groundwater system and has caused lower spring discharge within one year following mining." Proffer at 4. It does not explain by whom, define the area, or name the spring. The evidence may be inadmissible as irrelevant or if not probative of what is occurring at Big Bear Spring and Birch Spring if the spring mentioned by the Water Users is not Big Bear Spring or Birch Spring. If the spring is Big Bear Spring or Birch Spring, then the evidence has already been considered by the Board at the hearing.

The fourth example of evidence cited by the Water Users was clearly discussed at the hearing. For example, the amount of water intercepted by Co-op was discussed in the transcript in detail from pages 183-86. T. at 183-86. The Water Users were conducting the cross-examination. Nowhere in the transcript were the Water Users denied the right to call rebuttal witnesses. Thus, the Water Users should not claim they were denied the right to present evidence on the matter.

The Water Users' fifth example of evidence restricted by the Board is clearly incorrect. The Water Users rely heavily on a May 17, 1991 letter to claim the Board restricted their evidence. However, the Water Users are inconsistent in their pleading. The Water Users treat the letter as new evidence on page 15 of their pleading stating, "[t]hough not disclosed to the Board nor the Water Users at the Tank Seam hearing, Mr. Tom Munson, senior reclamation hydrologist for the Division, had previously recognized that Co-op's actions had a potential effect on Big Bear Spring." Munson Memorandum to Pamela Grubaugh-Litig, dated May 17, 1991." Water Users' Proffer at 15. The Water Users are clearly implying that the Division successfully hid evidence from the Water Users. The Division will deal with the falsity of that accusation when it addresses the use of the letter as new evidence. However, it is quite clear that the Board's restrictions did not prevent evidence from being admitted that the Water Users claim they did not know about. The fact that the Water Users attempt to submit the letter as new evidence should preclude it from being used as evidence that was excluded by the Board's restrictions.

The fifth example is evidence concerning McCadden Hollow, Tie Fork Canyon, Gentry Hollow and Wild Cattle Hollow. The Water Users' expert testified about the Tie Fork Canyon. Interestingly, he stated that another mine had impacted the Water Users' spring in the Tie Fork Canyon and the spring had to be closed. T. at 75-76. Subsequently, the other mine helped the Water Users develop a new spring in the area. Thus, it does not seem very pertinent to the issue of a hydrological connection between the mine and Big Bear and Blind Canyon. Moreover, nothing in the transcript seems to indicate that either the Division or Co-op tried to limit testimony about Tie Fork. Thus, the Water Users appear to have been free to expand their

testimony on the subject. Similarly, to the degree that surface flow measurements about McCadden Hollow, Gentry Hollow, and Wild Cattle Hollow demonstrate that Gentry "Ridge is the source of the water encountered by the mine", the Water Users appear to have had an opportunity to use such evidence in rebuttal if they had chosen to do so. At the hearing, Co-op presented evidence that the three aquifers for the mine area are recharged in an area other than Gentry Ridge. The logical time for the Water Users to present evidence on the issue would be in rebuttal. The Division would agree that if the Board, after hearing evidence from Co-op about the point of recharge, had prevented the Water Users from presenting such evidence, the hearing would have been unfair. However, nothing in the transcript suggests this occurred.

Similarly, compared to the third example the seventh example is very vague and thus difficult to analyze. However, the transcript of the first Board hearing is replete with testimony about fractures that in the Water Users' opinion would allow a connection between the mine and the springs. For example, the Water Users' expert, S. Bryce Montgomery, testified as follows:

> Now, there are conditions here that make this groundwater not only able to flow laterally through the previous sandstone beds, but it can also be transmitted vertically down through the strata, and it's due to extensive faulting that's occurred in this area. These are tensional faults, formed by tensional forces pulling apart the rock formation and allowing cracks or joints to be formed, and where there's actually been movement or displacement along the joints, that's a fault. You have openings that are developed vertically. These are near vertical faults that trend north and south. The Big Bear Spring and the Birch Spring, along with the Co-op mine, are located directly between two very prominent faults, as I show here on this sketch.

T. at 107.

Thus, the Water Users did raise this issue at the previous hearing. The transcript record is devoid of any attempt to limit the testimony on this issue. Thus, the matter was fully and fairly litigated.

II. THE WATER USERS HAVE NOT PRESENTED ANY NEW EVIDENCE THAT WOULD JUSTIFY A REFUSAL TO APPLY COLLATERAL ESTOPPEL

The Doctrine of Collateral Evidence protects even incorrect decisions. "[I]t is true that all preclusion doctrines rest on a determination that it is better to run the risk of perpetuating a wrong decision than to incur the multiple costs of repeated litigation." 18 CHARLES A. WRIGHT Et. al. § 4424 at 239. Thus, to defeat the application of collateral estoppel the Water Users must proffer evidence that demonstrates that the controlling facts have changed. Evidence that just tends to show the initial decision was incorrect ordinarily cannot defeat collateral estoppel. Thus, the Water Users needed to proffer evidence that showed that either the continued mining of the site or some external event had changed the hydro geology of the permit area. This the Water Users have failed to do.

Included in the Water Users new evidence list is evidence that Co-op pumped water into its old workings. The Water Users allege that the Division withheld this information from the Water Users. This charge is patently false. This letter has been a public document available for inspection since its creation. The fact that the Water Users failed to inspect the Division's files before the last hearing does not make this letter new evidence for collateral estoppel purposes. "Failure to adduce evidence available equally at the first trial as at the second is not likely to create a new issue." Wright, supra § 4417 at 164.

Moreover, it is clear from an examination of the hearing transcript that the Water Users were well aware of the pumping of water into the old workings. Testimony by Water Users' witness Darrel Leamaster clearly shows that Water Users were made aware of the pumping and in

fact had been informed by the Division of that fact. Mr Leamaster stated, "[a]nd what we eventually found out was that Co-op mine was discharging mine water back into the old workings of the old mine." T. at 89. Additionally, the transcript contains this following exchange between Tom Mitchell, the Division's Attorney and Mr Leamaster about the pumping of water into the old works and the subsequent build-up of ice. Question from Tom Mitchell: "But you don't have anything you can point to of our own personal knowledge of that time other than what you may have learned from your expert; is that a fair statement?" Answer from Mr. Leamaster: "Yes. Although we have been also given some information from DOGM, not directly from the mining company, but from DOGM that also--" Question from Tom Mitchell: From the records filed with DOGM as a requirement of their permit? Answer from Mr. Leamaster: " That also indicated there was a problem." T. at 95. Clearly, the Division did not attempt to hide evidence from the Water Users.

The Division refuses to rebut the remaining proffer of evidence paragraph by paragraph because, the Division's response is the same for each item. Nothing in the proffer even suggests that the hydro geology of the permit area has changed since the last hearing. The evidence is only offered to demonstrate that the Board made an incorrect decision the first time. Even if this were true, which the Division determined in the informal hearing is not the case, it would be legally irrelevant. If the doctrine of collateral estoppel did not protect incorrect decisions, it would be useless. Courts would always have to listen to the merits of the case before making a decision on collateral estoppel, thereby depriving the proponent of collateral estoppel the benefits of the doctrine. Once a court has listened to the merits of a case, it can make a decision without

invoking collateral estoppel. This is precisely what occurred at the Division level, where after hearing the merits of the case, the Division believed it was pointless to rule on collateral estoppel when Co-op was entitled to a favorable decision based on the merits.

III. DIVISION'S RECOMMENDATION ON THE APPLICATION OF COLLATERAL ESTOPPEL

CO-OP'S SUPPLEMENTAL MEMORANDUM ON ISSUES OF HEARING EXAMINER AND COLLATERAL ESTOPPEL (hereinafter "CO-OP'S MEMO") filed November 14, 1997 asked for collateral estoppel to apply to the following issues:

> [1] Big Bear Spring is not hydrologically connected to Co-op's permit area.
> [2] Birch Spring is not hydrologically connected to Co-op's permit area.
> [3] As of the date of the Tank seam Order, neither the quantity nor the quality of water at either spring was ever adversely impacted by mining at the Bear Canyon mine.
> [4] As of the date of the Tank seam Order, Co-op's mining operation was designed to prevent material damage to the hydrologic balance outside the permit area.
> [5] As of the date of the Tank seam Order, Co-op's permit application is complete and accurate, and in full compliance with all statutory and regulatory requirements.

CO-OP'S MEMO at 5.

The Division finds that issues 1,2, 4, and 5 are fully supported by the Board's Order ("ORDER") dated the 13 of June 1995. (EXHIBIT B) Paragraph one of the CONCLUSIONS OF LAW section of the ORDER supports application of collateral estoppel to issue five. Paragraph 52 of the FINDINGS OF FACT of the ORDER supports application of collateral estoppel to issues one and two. Paragraph 53 of the FINDINGS OF FACT of the ORDER supports application of collateral estoppel to issue four. The Division believes that issue three identified in Co-op's pleading needs to be modified. While the findings in Paragraph 52 preclude

a finding of an adverse impact due to an underground connection between the springs and the mine, it is possible that Co-op's pumping water into the old works could have caused surface contamination. Since the practice had stopped by the time of the Tank Seam hearing and thus was not relevant to whether the revision should be approved, the Board never ruled on that possibility. Consequently, collateral estoppel would not be appropriate applied to that allegation. If Co-op restricts the use of collateral estoppel to underground contamination, the Division would support that use.

CONCLUSION

The proffer by the Water Users has not demonstrated that the Board restrictions prevented a full and fair litigation of issues that Co-op claims should be precluded from further litigation by the doctrine of collateral estoppel. Moreover, the Water Users have not proffered any evidence why the earlier Board determinations would now be invalid.

Thus, the Division supports Co-op's attempt to apply collateral estoppel to the five issues with the above discussed modification of issue four.

DATED this 6th day of January, 1998.

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CERTIFICATE OF SERVICE

I hereby certify that I caused a true and correct copy of the foregoing RESPONSE OF THE DIVISION OF OIL, GAS AND MINING TO WATER USERS' PROFFER OF EVIDENCE or Docket No. 95-025, Cause No. ACT/015/025 to be mailed, postage prepaid, this 8th day of January, 1998, to the following:

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BEFORE THE BOARD OF OIL, GAS AND MINING
DEPARTMENT OF NATURAL RESOURCES
STATE OF UTAH

IN RE: 5-YEAR PERMIT RENEWAL, CO-OP MINING COMPANY, BEAR CANYON MINE, EMERY COUNTY, UTAH	)	**PROFFER OF WATER USERS PER REQUEST OF THE BOARD**
	)	**Cause No. ACT/015/025**
	)	**Docket No. 95-025**

Castle Valley Special Service District ("Castle Valley"), North Emery Water Users Association ("NEWUA") and Huntington-Cleveland Irrigation Company ("Huntington-Cleveland") (collectively, "Water Users"), by and through their respective attorneys, Jeffrey W. Appel and W. Herbert McHarg of Appel & Warlaumont, and J. Craig Smith of Nielsen & Senior, respectfully submit this Proffer as requested by the Board of Oil, Gas and Mining ("Board").

Per the request of the Board this Proffer addresses: (1)

information that the Water Users would have presented during the Tank Seam hearings had Water Users known that a determination would be reached on the Blind Canyon Seam and had they not been specifically informed it would not be at issue; and (2) new information and evidence that must be considered by the Board specifically concerning the Blind Canyon Seam. It should be noted that the existence of this information as well as the Division of Oil, Gas and Mining ("Division") ruling below also prevents Water Users from being barred by collateral estoppel. Much of this evidence was addressed at length in Objector's Joint Post Informal Conference Memorandum and Closing Argument which is attached and incorporated herein.

In a de novo review situation as is statutorily required here, the evidence must be heard in the context of what is at issue and now exists. It is important that Water Users concerns be heard and due process requires that result.

I. EVIDENCE THAT WATERS USERS WOULD HAVE PRESENTED DURING THE TANK SEAM HEARINGS

Water Users would have presented a very different case had they known that the Division's ruling would include findings and conclusions regarding the Blind Canyon Seam. However, because the Board, the Division and Co-op successfully limited the scope of the hearing to the impacts created by proposed mining of the Tank Seam, the Water Users were prohibited from presenting all evidence regarding the hydrologic effects of mining in the Blind Canyon

seam. Also, projections of impacts down gradient from the Tank Seam mining efforts, the paucity of information available from the Co-op monitoring wells and the illegal activities of Co-op now known were not presented. Of course, much of the injury that would occur by wooden application of the collateral estoppel doctrine is rooted in the overall chilling effect on the participants presentation of the case and examination of witness, as well as responses to questions from members of the Board, which are difficult to quantify. In addition, to the extent it may be reconstructed after the fact, the following evidentiary issues are noted:

1. Evidence of groundwater flow elevations for the Lower Blackhawk Formation/Spring Canyon Sandstone aquifer and the projected intercept with the floor of the Blind Canyon Seam. The groundwater surface was projected using information from the Co-Op Mine permit. The intercept between the groundwater surface and the Blind Canyon Seam is precisely where water is currently entering the mine.[1] This would have established that Co-Op had been intercepting the groundwater table as mining continues northward, and is important because the flows that enter the mine are decreasing over time as the groundwater interface is artificially dewatered by mining and the groundwater interface declines below the floor of the coal seam. In other words, the impact already was

[1] It should be noted this mine was virtually dry when first permitted. It now discharges an average of 100 gpm of water.

occurring and had occurred. Furthermore, the evidence would have shown that mining intercepted the groundwater flow to the south and that those flows declined or ceased as dewatering of the groundwater system occurred further north, and would have demonstrated the existence of unreported in-mine and out of mine movements of intercepted water.

2. The geochemical, radiometric and stable isotope data indicate that several flow systems exist in the area. Evidence would have been presented to show that discharge associated with Birch Spring is different than most of the water entering the Blind Canyon Seam and discharging at Big Bear Spring.

3. Evidence that mining in the area has in the past dewatered a groundwater system and has caused lower spring discharge within one year following mining.

4. Information on the dates Co-op intercepted water flow in the mine and the quantity of flow. The Co-op intercepted about 100 gallons per minute in the mine in August of 1989. Information the Co-op submitted to DOGM verifies this data but it has never been considered or acknowledged by DOGM. This flow of water has been continuous and has always been reported at over 90 gpm. Therefore, the water is not a perched aquifer which drains over a period of several months, as the mining operation advances. It is an active natural system that was running to the springs until they intercepted it. Spring flow has never recovered since August of 1989. This is extremely important because it disproves the Co-op

and DOGM theory that the only water encountered in the mine is perched aquifers that dry up. Instead it is a continuous flow that has never dried up and has impacted the flow to the springs.

5. Letter from DOGM concerning Co-op's unauthorized and illegal discharge of water into the abandoned mine working in the Blind Canyon Seam. In the Tank Seam hearings a great deal of time was spent discussing the icicle formation above Big Bear Spring and the water quality impact on Big Bear Spring. We now know these problems were caused by Co-op's discharge of water into the abandoned mine workings on the south end of the mine. This has been verified by an inter office memo from DOGM dated May 17, 1991. It is important to note the date on DOGM's letter. It knew about this throughout the Tank Seam Hearing and failed to come forward with the information. This water impacted the water quality of Big Bear Spring and caused the icicle formation.

6. Furthermore, evidence of additional surface flow measurements in McCadden Hollow, Tie Fork Canyon, Gentry Hollow, and Wild Cattle Hollow would indicate areas of stream loss and groundwater recharge to the strata underlying Gentry Ridge. In addition the evidence would have shown that precipitation falling on the Ridge is the source of the water encountered by the mine. It does not come from some unknown recharge area far upgradient as stated by Co-op.

7. Fracture and joint density and orientation data would have been presented during the hearing to indicate the intensely

fracture nature of the rock formations in CO-OP mine permit area which allows movement of water to the springs..

II. NEW INFORMATION AND DATA

As they are by law entitled to do at the time of permit renewal, the Water Users will present new evidence to support the Water Users position that Co-Op's mining operations are hydrologically connected to the Springs, that the PHC is flawed, inaccurate and based on outdated theories, and that mining activities do not comply with current environmental protection standards. The evidence will include, but would not be limited to, the following:

1. Evidence that the Gentry Mountain groundwater system is interconnected from top to bottom. The Division's July 20, 1994 Technical Analysis and permit revision approval incorporated the Cumulative Hydrologic Impact Assessment ("CHIA") for the Gentry Mountain Area. See Division Order at 3 ¶ 2. The CHIA finding quoted in the Division's Order implied that the mine and the Springs are not hydrologically connected. Id. The Division's Order indicates no understanding of or inquiry into the location of the recharge area for the water arising in the Water User's springs. Evidence presented by the Water Users, including evidence regarding the fractured nature of the entire system, will enable the Board to conclude that there is no difference in the recharge location for the water from Birch Spring, Big Bear Spring, and the mine -- all are recharged from precipitation falling on Gentry

Mountain. Significantly, all experts who testified at the informal conference agreed that Gentry Mountain provides the recharge for both water in the mine and the springs.

2. At the informal conference, for the first time and in direct contravention of its statements made at the time of renewal in 1990-1991, Co-Op admitted it pumped vast quantities of water intercepted at the working face of the mine into a worked-out portion of the mine and elsewhere during period from the 1989-1992. See HT III. at 25; 217-238; 250; 292. Evidence disclosed to the Division, but not made public supports the long maintained position of the Water Users that this pumping created the anomalously high flows and water quality problems experienced at Water Users sources during this period of time. The import of this admission is that the mine is hydrologically connected to the springs. Yet, Co-op and the Division withheld this information and the Division ignored both the admission and the evidence below. This evidence would affirmatively establish that water inside the mine does in fact communicate with the springs of the Water Users.

3. Water Users will present evidence that Co-Op's dumping of water into the old workings contaminated Big Bear Spring demonstrating an interconnection. Much of this evidence was presented at the informal conference and was discussed in detail in the Water User's Joint Post Informal Conference Memorandum and Closing Argument (See attached at pages 9-12). Despite this evidence, however, the Division Order found that "the pumping of

water out of the mine into a surface drainage above Birch Spring does not demonstrate the hydrologic connection of water in the mine to Birch Spring. . . ." Division Order at 7 ¶ 18. The Order does not address impacts to Big Bear Spring in the context of prior events demonstrating interconnection, nor does it deal at all with the core issue of communication and interconnection between mine working and the Springs.

4. Water Users will present additional evidence establishing the communication with and interconnection between the mining operations and the Springs. The evidence will show the following:

a. New and additional Geochemical and Radiometric Sampling was conducted at springs and mine inflow locations in accordance with a Division Order. Several large volume springs in the vicinity of Bear Canyon were sampled for major cations, anions, trace metals, and radiometric and stable isotopes. The list of springs includes Big Bear Spring, Little Bear Spring, Birch Spring, Lower Tie Fork Spring, Upper Tie Fork Spring, and two unnamed springs located north of Bear Canyon on Gentry Mountain. The sampling indicates that most of the water in the groundwater system was modern to slightly premodern water. Carbon-14 dates of Birch Spring water were the oldest sampled in the area and suggests that the Pleasant Valley Fault may serve as a hydrologic barrier.

b. Mine inflow samples were collected by the Water Users and by Co-Op for major cations, anions, trace metals,

and radiometric and stable isotopes. The samples from inside the mine were generally modern to premodern except for samples collected near the Dry Canyon Fault (Pleasant Valley Fault System). This showed that the water in this area may be different from water east of the fault system. This would include water encountered in the Blind Canyon Seam.

c. A groundwater flow model was presented by the Water Users showing that the water intercepted by Co-Op in the Blind Canyon Seam is the result of the interception of the water table tributary to the lower Blackhawk/Star Point Sandstone aquifer. Groundwater elevations from Co-Op and Plateau groundwater monitoring wells completed in the Spring Canyon Sandstone Member of the Star Point Sandstone and in the Lower Blackhawk Formation were used to prepare the groundwater surface. The intercept line between the floor of the Blind Canyon Seam and the water table in the Lower Blackhawk/Spring Canyon Sandstone was projected on an outline of the current mine layout in the Blind Canyon Seam. The intercept between the coal seam and the water table coincided with the locations where groundwater flows into the mine. Evidence will support that this is the correct model for groundwater movement and resultant inflow into the mine.

d. Precipitation data collected from eight meteorological stations in the are indicates that cyclic changes in precipitation are common and that the long-term

precipitation trend is neither increasing nor decreasing, but remains nearly constant. The average of total monthly precipitation prior to August 1989 was 1.75 inches. Precipitation since August 1989 has averaged 1.85 -- a 6% increase. Thus, dewatering is not a function of the precipitation variable as suggested by Co-op.

e. A connection between precipitation (spring runoff) and spring discharge is observed if you sequentially compare the data. If average monthly precipitation is compared to average monthly flows at Big Bear Spring and Little Bear Spring (a reasonable control due to its location on the other side of the Canyon), the discharge of both Springs generally follows changes in precipitation prior to 1985. Co-op encountered significant flows of water in 1989 and consistently thereafter. The evidence will show that after 1989, the discharge of Big Bear Spring did not follow changes in precipitation while Little Bear Spring continued to follow precipitation changes. Furthermore, the data will show that Big Bear Spring discharge has decreased by 71% since 1989 while precipitation has increased by 6%. The data that has become available since the last renewal proceeding documents the impact of mining.

f. Birch Spring showed nearly constant spring flow during the period of record and only a very modest decline following the decline in precipitation in 1985. The flow

spike and subsequent decline in flow occurred after groundwater was intercepted in the Blind Canyon Seam and after Co-Op discharged mine water into Dry Canyon. Birch Spring discharge has declined significantly since 1989, as compared to flows prior to 1989, while precipitation has increased by 6%. The only known material variable is mining by Co-op.

g. Prior to 1989, spring discharge at Little Bear Spring and Big Bear Spring peaked between April and July. This is approximately 2 to 3 months following spring runoff and peak flow in most of the surface streams. Following 1989, peak flow at Little Bear Spring has continued to follow spring runoff while peak flows at Big Bear Spring have been almost nonexistent. Since Co-Op started discharging into Bear Creek, modest peak flows have occurred in June or July (1992 to present). The peak flows have been intercepted by Co-op's mining efforts.

h. Co-Op has suggested that flows at Big Bear Spring derive from Bear Creek. The Water Users have since measured flow at four locations: (1) Bear Creek-Huntington Creek confluence; (2) below the Panther Sandstone; (3) above the Panther Sandstone; and (4) above the Spring Canyon Sandstone. The data presented from these measurements shows a stream loss of 8 gpm or less. Stream loss would have to be maintained on the order of a constant 100 to 150 gpm to sustain the flows at Big Bear Spring.

i. Since April of 1991 Co-Op has discharged water under their discharge permit into Bear Creek. Discharge levels have ranged from a low of 45 gpm to a high of 318 gpm. The average reported discharge has been 141 gpm. The reported discharges from the mine are very close to the same flows that we have lost from our spring.

5. The Division overlooked the logical reasoning that a CHIA must be inadequate if it is based on a Probable Hydrologic Consequences ("PHC") containing inaccurate and insufficient data. Furthermore, the Division made no attempt to rationally resolve the several co-existent and opposing theories, and included no conditions on its approval of the permit renewal to secure information designed to resolve once and for the divergent theories of water transit in the geologic area in question. Such a resolution is required by law and has yet to occur. The current PHC lacks sufficient information to determine actual impacts and the need for adjustments, and is based on theories that are now outdated and preempted by new theories postulated by Co-Op's own expert before the Division. This being the case, the Board must consider the new information and the evidence Water Users will present. The result should be the requirement that Co-Op obtain indepth and revealing hydrologic data to update and correct the PHC so that the CHIA may be updated. Water Users will present evidence to oppose Co-op's new theories, and to establish the need for additional data to update the PHC and CHIA. Too much has been left

unknown. This evidence would address the following:

a. At the informal conference, Co-Op totally changed its prior position with respect to hydrologic data in the PHC and relied on an entirely new theory postulated by their new expert. The abandoned theory was that the mine was continuing to intercept many small perched aquifers, rather than a major source of groundwater. This theory forms the basis for the current PHC. The new theory rejected the perched aquifer concept and is premised instead upon the notion that the mine intercepts and has intercepted a single broad-based sandstone channel that produces and produced the water in the mine. Despite the fact that significant amounts of water have been encountered since 1989, this theory is not addressed in the PHC because, according to the Co-op, "the initial hydrogeologic evaluation in the PHC did not specifically address the channel because it hadn't been encountered at the time it had been written." Testimony of Chris Hansen, HT III. at 232. Furthermore, Co-Op now estimates that the amount of water discharged by the sandstone channel is a sustained inflow of 2 gpm (which was based upon unverified metered data from Co-Op). The Water Users will present evidence disputing this estimate as well as the viability of the theory that a sandstone channel has produced the water encountered by mining to date (up to 110 gpm).

b. The current PHC describes the stratigraphic sequence

in the mining area as a "great thickness of discontinuous sandstone, coal, and mud/siltstone units." PHC at 2-6. The PHC also states that "[d]rainage of water from faults and fractures produces the largest volume of water flowing into the mine." PHC at 2-33. While that has long been the theory of the Water Users, at the informal conference, Richard White, another expert witness called by Co-Op, testified that this statement in the PHC statement was incorrect, citing the new theory that "the largest volume of water flowing into the mine is from the sandstone channel." HT III. at 260.

In order to determine the viability of these inconsistent, new, and scientifically unsubstantiated theories, data must be collected. It is not in the record from the DOGM. Evidence will be presented to establish the boundaries of the recharge area for the Springs; where the water intercepted by Co-Op's mining operations was destined before it was intercepted; whether the "sandstone channel" is connected to other sources in the Water User's recharge area or otherwise connected to the Springs; and among other conceivable hypothesis, whether the "sandstone channel" interrupts or dips below the Blind Canyon Seam, or as the Division presumed, without adequate evidence, spills out in a "flood plain" lip over the top of the seam only. These facts and the scientific basis therefore represent new issues for the Board and must be properly resolved in the de novo hearing requested by Water Users.

6. Mining activities which re-direct or contaminate water

are in violation of the Environmental Protection Standards set forth at R645-303-233.120. They also damage the hydrologic balance outside the permit area in violation of R645-301-750. As was established at the Informal Conference, when the Bear Canyon Mine was first permitted and during its early years, it was virtually dry. HT III. at 8. However, as mining proceeded to the north, and upgradient into the groundwater table, significant and continuous flows of water were encountered and continue to be encountered today. In February, 1994, Co-Op was assessed penalties by DOGM for failing to take adequate precautions to protect hydraulic resources at its Big Bear Mining operations. Co-Op has previously been cited for violations of requirements dealing with mine openings, subsidence, runoff containment, waste removal, and water monitoring. Though not disclosed to the Board nor the Water Users at the Tank Seam hearing, Mr. Tom Munson, senior reclamation hydrologistfor the Division, had previously recognized that Co-Op's actions had a potential effect on Big Bear Spring. Munson Memorandum to Pamela Grubaugh-Litig, dated May 17, 1991. Testimony at the Informal Conference also established that Co-Op's mining operations have caused contamination, diminution or interruption of Water User's Water Rights recognized by the State of Utah. Water Users will present evidence to show that Co-Op's mining operations have not been, and are not now being conducted to minimize effects to Water User's state appropriated water rights. The water encountered and intercepted by the Co-op mining efforts is

hydrologically connected with Big Bear and Birch Springs, and Water Users will present more evidence to establish a violation of the Environmental Protection Standards and interference with vested water rights.

7. There are numerous false and inaccurate statements in the PHC; therefore, the CHIA as a matter of fact and law fails to properly address the actual cumulative hydrologic impacts of mining. At this point in time, these issues must be resolved by the Board in a de novo proceeding. Water Users have addressed these issues in detail on pages 8 through 21 of Objector's Joint Post Informal Conference Memorandum and Closing Argument (attached). These issues are not susceptible to bar by the doctrine of Collateral Estoppel.

8. In paragraph 15 of the Order, the Division states that "Big Bear Spring's flow rate has also recovered, from a low of 76 g.p.m. in mid-1995 to 148 g.p.m. in late 1996." Division Order at 7 ¶ 15. The Division ignored uncontroverted testimony that prior to Co-op's interception of water by its mining efforts, the Water Users had close to 300 gpm emanating from Big Bear Spring. HT I. at 30. Further evidence would be presented to show that since mining efforts of Co-op began to intercept and divert water, Water Users water sources have been impacted and have never fully recovered. The only legitimately available cause for this impact is the mining efforts of Co-op.

The above evidence is of the character that the Board will hear, and is necessary in order for the Board to fairly, completely, and properly adjudicate the hydrologic effects of mining in the Blind Canyon Seam in accordance with the law and

regulations governing its deliberations.

Summary

Irrespective of the past problems with the full and fair presentation of the Water Users position regarding the currently pending Permit Renewal and the Due Process aspects thereof, much time has passed. New and time tested evidence is available and the issues and controversies regarding impacts of mining on the long held water rights of Water Users is ready to present at a de novo hearing. The legal doctrine of Collateral Estoppel is illsuited and inapplicable to the scenario that is currently before the Board. We wish to present out case regarding mining in the Blind Canyon Seam as we are entitled by law to do. Thank you for your thought, review and consideration.

DATED this 24th day of December, 1997.

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CERTIFICATE OF SERVICE

I hereby certify that on the 24th day of December, 1997, I caused a true and correct copy of the foregoing Proffer of Water Users Per Request Of The Board to be mailed, postage pre-paid, to the following:

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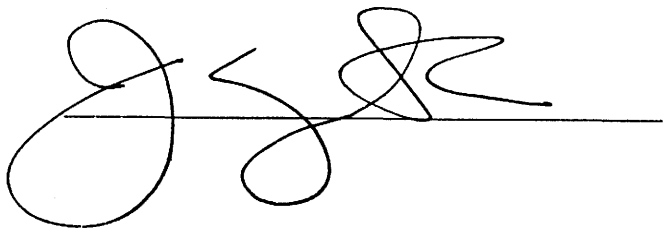

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EXHIBIT B

B

BEFORE THE BOARD OF OIL, GAS AND MINING
DEPARTMENT OF NATURAL RESOURCES
STATE OF UTAH

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IN THE MATTER OF THE REQUEST FOR AGENCY ACTION AND APPEAL OF DIVISION DETERMINATION TO APPROVE SIGNIFICANT REVISION TO PERMIT TO ALLOW MINING OF TANK SEAM BY CO-OP MINING COMPANY BY PETITIONERS NORTH EMERY WATER USERS ASSOCIATION, HUNTINGTON-CLEVELAND IRRIGATION COMPANY, AND CASTLE VALLEY SPECIAL SERVICES DISTRICT, CARBON COUNTY, UTAH	:	ORDER DOCKET NO. 94-027 CAUSE NO. ACT/015/025

---oo0oo---

Pursuant to the Appeal of the Division Determination to Approve the Significant Revision of Permit to Allow Mining of the Tank Seam by Co-Op Mining Company By Petitioners North Emery Water Users Association, Huntington-Cleveland Irrigation Company, and Castle Valley Special Services District, this cause came on for hearing before the Board of Oil, Gas & Mining (the "Board"), Department of Natural Resources, State of Utah, on Tuesday, October 25, 1994 and Thursday, November 17, 1994 in the Boardroom of the Division of Oil, Gas & Mining (the "Division"), 3 Triad Center, Suite 520, 355 West North Temple, Salt Lake City, Utah.

The following Board members were present and participated in the hearing and the Board's decision herein:

David D. Lauriski, Chairman
Jay L. Christensen
Judy F. Lever
Thomas B. Faddies
Raymond Murray
Kent G. Stringham

Board Member Elise Erler participated in the hearing, but did not participate in the Board's decision in this matter.

The Board was represented by John W. Andrews, Esq. and the Division was represented by Thomas A. Mitchell, Esq., both Assistant Attorneys General for the State of Utah.

Petitioners North Emery Water Users Association and Huntington-Cleveland Irrigation Company were represented by J. Craig Smith, Esq., of the law firm of Nielsen & Senior, Salt Lake City. Petitioner Castle Valley Special Service District was represented by Jeffrey W. Appel, Esq., of the law firm of Appel and Mattson, Salt Lake City. Respondent Co-Op Mining Company was represented by Carl E. Kingston, Esq., and F. Mark Hansen, Esq., both of Salt Lake City.

NOW THEREFORE, the Board, having considered the pleadings filed by the parties, the testimony of the witnesses, and the exhibits presented at said hearing, and being fully advised in the premises, now enters the following Findings of Fact, Conclusions of Law, and Order.

FINDINGS OF FACT

A. Introduction.

1. The petitioners in this proceeding are appealing the determination of the Division of Oil, Gas & Mining (the "Division") to grant Co-Op Mining Company ("Co-Op") a significant revision to its mining permit under the Utah Coal Mining and Reclamation Act, Utah Code Ann. § 40-10-1 et seq.

2. The significant revision to Co-Op's mining permit would allow Co-Op to mine a coal seam known as the Tank Seam within Co-Op's existing Bear Canyon Mine in Emery County, Utah. The Tank Seam is located approximately two hundred vertical feet above Co-Op's existing coal mining operations, which are currently being conducted in the Blind Canyon coal seam in the Bear Canyon mine.

3. Petitioners North Emery Water Users Association, Huntington-Cleveland Irrigation Company and Castle Valley Special Services District (collectively the "Water Users") are engaged in the collection and distribution of culinary and irrigation water to users in the general vicinity of the Bear Canyon mine.

4. The Water Users generally contend that Co-Op's existing and proposed mining operations have negatively affected the quantity and quality of water flow from two springs, Birch Springs and Big Bear Springs. Birch Spring is managed by and provides water for the water systems of petitioners Huntington-Cleveland Irrigation Company and North Emery Water Users. **Hearing Transcript (hereinafter cited as "T. __.") at 40.** Big Bear Spring is managed by and provides water for the water system of petitioner Castle Valley Special Service District. **T. 74-76.**

5. The Division approved Co-Op's Application for a Significant Revision to permit mining in the Tank Seam by a decision and accompanying Technical Analysis dated July 21, 1994.

6. The Water Users timely appealed the Division decision on August 22, 1994, and requested that the Board of Oil, Gas &

Mining (the "Board") either reverse the Division's approval or, in the alternative, require Co-Op to provide replacement water supplies to the Water Users at Co-Op's sole expense.

7. The Board conducted an extensive formal evidentiary hearing in this matter on October 25, 1994 and November 17, 1994, and additionally considered post-hearing memoranda filed by the parties.

8. At the evidentiary hearing, the Water Users presented testimony by certain of its employees and officers concerning the history and development of Birch and Big Bear Springs, and historic flow rates of the springs. The Water Users also presented expert testimony by Mr. Bryce Montgomery, a consulting geologist, about the alleged impacts of Co-Op's mining activities on the quantity and quality of flows from the springs, and the geologic mechanisms by which such impacts might occur.

9. Co-Op presented evidence in rebuttal by its expert consultants that all water encountered within the Bear Canyon mine was for a variety of reasons hydrologically separate from Big Bear and Birch Springs. Co-Op's experts also testified that the Tank Seam, the area which it sought to mine pursuant to its application for a Significant Permit Revision, was essentially dry and not in any way linked to the disputed aquifer(s).

10. The Division also presented testimony by Division hydrologist Tom Munson and Division permit supervisor Darron Haddock concerning Co-Op's application and associated hydrologic studies.

B. Area Geologic Description.

11. The Bear Canyon Mine is located near the eastern margin of the Wasatch Plateau Coal Field in Bear Creek Canyon, a tributary to Huntington Canyon, in Emery County, Utah. **Exhibit D, p. 1-2.** In the Bear Canyon mine, coal is currently removed from two generally horizontal seams within the Blackhawk Formation, the Blind Canyon Seam and the Hiawatha Seam. **Id. at p. 2-4.** Co-Op began operations at the mine in 1981. **T. 168.**

12. The Tank Seam, which Co-Op seeks to mine pursuant to the disputed application for Significant Permit Revision, is also located within the Blackhawk formation, 220 to 250 vertical feet above the Blind Canyon seam. **Id. at p. 2-6.**

13. In the vicinity of the Bear Canyon mine, the stratigraphic sequence from the surface downward includes the North Horn Formation, the Price River Formation, the Castlegate Sandstone, the Blackhawk Formation, the Star Point Sandstone, and the Mancos Shale. **Exhibit C, Table 2-4.**

14. In the vicinity of the mine, groundwater is contained within the Star Point sandstone. The Star Point sandstone is composed of three separate members: the upper member is the Spring Canyon member, the middle member is the Storrs member; and the lower member is the Panther member. **T. 105-106.**

15. Birch Springs is located on the east side of Highway 31 in Huntington Canyon between Bear Canyon and Trail Canyon. **Exhibit 1 ; T. 39.** Big Bear Spring is located on the north side of Bear Canyon approximately one half mile from Co-Op's mine

portal into the Blind Canyon seam. **T. 77-78.** Neither spring is located within the permit area. **Exhibit C, p. 2-9.**

16. The two springs both issue from the Panther member of the Star Point sandstone where it contacts the Mancos shale. The Mancos shale is impervious to water and acts as a floor to hold the groundwater above it in overlying formations. **T. 105.**

C. Disputed Hydrologic Issues.

17. Petitioners called as an expert witness Mr. S. Bryce Montgomery, a consulting professional geologist, with experience in groundwater hydrology. **T. 99-100.**

18. Mr. Montgomery's basic theory of the hydrology of the area was based upon the concept of a regional aquifer. The base of this aquifer is the level at which the Panther member of the Star Point sandstone contacts the impermeable Mancos shale. It is at this level that Birch and Big Bear Springs issue forth. **T. 106.** Mr. Montgomery testified that the aquifer has a potentiometric surface (the level below which the aquifer is fully saturated) that slopes upward to the north toward Gentry Mountain. **T. 106.** As the potentiometric surface slopes upward to the north, Mr. Montgomery posited that it reached up into the Blackhawk formation which contains the coal beds, and where it is intercepted by coal mining. **T. 106.**

19. Mr. Montgomery testified that groundwater in this aquifer flows not only laterally through the pervious sandstone beds, but also vertically downward through the strata by means of extensive faulting in the area. **T. 106-107.** Birch and Big Bear

Springs, along with the Co-Op mine, are located between two large faults known as the Pleasant Valley Fault and the Bear Canyon fault. **T. 107; Exhibit 8.**

20. Mr. Montgomery's conclusion about the effects of Co-Op's mining was that the north portion of Co-Op's mining in the Blind Canyon seam had intercepted the potentiometric surface of the regional aquifer. He testified that water that would normally flow in its natural course down through the bedding and the fracture system to discharge naturally from the subject springs was instead being intercepted by coal mining and conveyed out of the groundwater system. **T. 122, 141.** This would in turn reduce the amount of water in storage for the springs, and negatively affect their flow for many years. **T. 122.**

21. Mr. Montgomery also testified about what he considered to be anomalous flows from the subject springs caused by Co-Op's alleged dumping of surplus water in the south end of the mine, demonstrating a linkage between the mine workings and the springs. **T. 147-148.** Mr. Montgomery testified that this water carried or picked up calcium sulfate, resulting in the anomalous levels of calcium and sulfates shown for 1991 by Exhibit 18. **T. 148.**

22. Co-Op called as expert witnesses Mr. John D. Garr and Mr. Richard B. White, respectively a consulting geologist and a consulting hydrologist with Earthfax Engineering ("Earthfax"). Earthfax was hired by Co-Op to revise the hydrologic characterization of the Bear Canyon mine and the Statement of

Probable Hydrologic Consequences ("PHC") for the mine. **T. 200.**

23. Earthfax's activities included the drilling of four in-mine monitoring wells downward from the Blind Canyon seam to the Mancos shale, with hydrologic testing of each of the three members of the Star Point sandstone. **T. 201.**

24. Mr. Garr disputed Mr. Montgomery's testimony concerning the existence of a regional aquifer, testifying that more site-specific data led him to reach a different conclusion. **T. 202.**

25. Mr. Garr testified that there are three separate aquifers below the mine, each with a separate piezometric surface and each separated and confined by shale interbedding within the Star Point sandstone. **T. 208-209.** He concluded that the confinement of the aquifers, particularly in the northernmost drill hole, suggested that the recharge for the aquifers supplying the springs is miles to the north at a higher elevation, rather than in the Co-Op area. **T. 209, 211, 261, 288-289.**

26. Mr. White testified that the recharge area was far to the north of the mine in a "shatter zone" of fractured strata where water there would percolate easily downward into the Star Point sandstone. **T. 312.** The significance of this zone was that the recharge area for Big Bear and Birch springs in the Star Point sandstone would be lower than the mine, and not subject to being affected by it. **T. 312-313, 322-326, 339-340.**

27. Both Mr. Garr and Mr. White concluded that any water being intercepted by mining in the Blind Canyon seam is a

confined aquifer within the uppermost Spring Canyon member of the Star Point sandstone, which due to the confinement of the aquifers is separate from the source of the springs. **Exhibit C, p. 2-33; T. 251, 255-256, 284, 288-289.** They testified that because the Panther member, which is the source of water to both Birch and Big Bear springs, is hydrologically disconnected from the Spring Canyon member, any aquifer in that member encountered while mining would not affect spring flow. **T. 358-359, 362.**

28. Both Mr. Garr and Mr. White testified that water being encountered in the Blind Canyon seam generally represented perched aquifers, rather than the interception of the regional aquifer posited by Mr. Montgomery. **T. 223, 285.** Relying on a United States Geologic Survey report concerning mine dewatering in the area, Mr. Garr testified that the rate of natural downward flow into the regional aquifer is unlikely to be affected by the interception of perched aquifers. **T. 223.**

29. Mr. Garr and Mr. White testified that the location of the Blind Canyon fault was highly significant to the issue of whether Co-Op's mining in the Blind Canyon seam is affecting the flow of Birch Springs. Birch Springs is actually 800 feet to the west of the Blind Canyon fault, so the fault lies between the mine and the springs. **T. 118, 212, 293-294.** Mr. Garr testified that if groundwater were moving from the mine into the fault (which lies between the mine and Birch Springs) the water would either be stopped by the fault or the fault would act as a conduit for the water to emerge at the surface. **T. 213, 266.**

Because no spring exists where the Blind Canyon fault intersects the surface, Mr. Garr concluded that there was no connection between groundwater encountered in the mine and Birch Springs. **T. 213. 266-267.**

D. Hydrologic Effect of Mining In The Tank Seam.

30. There was substantial legal dispute between Co-Op and the Water Users concerning the scope of the Board's review of the probable hydrologic consequences of mining. Co-Op argued that the only factual issue that the Board should consider was whether mining in the Tank Seam would cause material damage to the hydrologic balance. The Water Users argued that the Significant Permit Revision would allow the Bear Canyon mine to remain in operation, and would allow mine dewatering to continue. They contended the Board is therefore required to consider the possible hydrologic impact of all mining in the Bear Canyon mine at this time, rather than the impact only of mining the Tank Seam.

31. As more fully set forth in the succeeding paragraphs, the Board finds that, based upon the evidence, Co-Op's proposed mining in the Tank Seam will not cause material damage to the hydrologic balance.

32. The Water User's expert Mr. Montgomery admitted that no appreciable groundwater exists in the Tank Seam, and that the potentiometric surface of the principal aquifer was below the Tank Seam. **T. 112, 123-125, 162.** This testimony was corroborated by Co-Op's witness Mr. Garr, who testified that any

aquifer was well below the Tank Seam. **T. 265.**

33. Mr. Montgomery incorrectly assumed that there would be an internal ramping system within the mine between the Tank Seam and the area of the Blind Canyon seam presently being mined. **T. 113, 162.** This assumption led Mr. Montgomery to conclude that the interval between the Tank Seam and the Blind Canyon Seam would be affected. **T. 113.** Mr. Montgomery also posited that contaminants deposited within the mine workings in the Tank Seam, and outside from road salt, would be conveyed downward to the base of the hydrologic system over time.

34. In fact, Co-Op will transport coal from the Tank Seam by means of a separate portal, and then into a vertical shaft back into the Blind Canyon seam to Co-Op's existing conveyor system. **T. 174-176.** This shaft intersects the south area of Co-Op's mine workings, in an area that is entirely dry. **T. 175.** The area underlying the access road is also dry. **T. 175.** This shaft encounters no water seepage anywhere in the hole between the Tank Seam and the Blind Canyon seam. **T. 274.**

35. Mr. Montgomery also testified that the removal of coal from the Tank Seam would eventually cause the collapse of overlying beds, increasing jointing and fracturing and furthering the conveyance of water and potential contaminants downward. **T. 113.**

36. Mr. Montgomery additionally testified that, although the Tank Seam was above the regional aquifer, it might encounter small perched aquifers, and interrupt the flow downward of water

contained in those aquifers through fractures, thereby reducing supply to the regional aquifer. **T. 124-130, 162-163.**

37. The Board notes the inconsistency between Mr. Montgomery's testimony that mining would eventually cause additional fracturing, thus increasing downward flows, with his testimony that mining would limit downward flows.

38. Co-Op's witnesses presented evidence rebutting Mr. Montgomery's testimony that mining within the Tank Seam could have negative hydrologic effects. In order to test whether water existed within the Tank Seam, Co-Op conducted a testing program involving the drilling of eight holes upward from the Blind Canyon seam into the Tank Seam at various locations. **T. 171, 179.** All but one of these drill holes was essentially dry, although one hole encountered flows of approximately a half gallon per minute. **T. 172, 283.** Similarly, the eight foot diameter bore hole between the two levels was also dry. **T. 283.**

39. Because there is little water in the Tank Seam, there is little possibility that any contaminants could be carried downward from the Tank Seam into the aquifers supplying the Water Users' springs. **T. 285-287, 344.** There is no significant recharge to the aquifers coming from the ridge above the mine because it is very narrow and has little flat surface to catch runoff. **T. 211, 220-222.**

40. In summary, the evidence establishes that:

(a) the Tank Seam is essentially dry;

(b) the Tank Seam is well above the "regional aquifer" theorized by the Water Users;

(c) no direct connection between any water that might in the future be located in the Tank Seam and the ostensible regional aquifer has been established;

(d) the surface above the seam has limited recharge potential, further reducing the risk of contaminants being conducted downward.

41. Based upon this evidence, the Board finds that mining in the Tank Seam will not cause material damage to the hydrologic balance, either through reduction in supply or contamination. Co-Op has satisfied its burden of proof on this issue.

E. Hydrologic Effect of Mining In the Blind Canyon Seam.

42. Because the parties devoted a substantial portion of their evidence to the hydrologic effects of mining in the Blind Canyon seam, the Board feels obligated to make findings of fact concerning this issue.

43. The Board is faced with two differing expert models of the effect of mining in the Blind Canyon seam on aquifer(s). The Water Users' expert, Mr. Montgomery, testified to the existence of a regional aquifer with a potentiometric surface sloping from north to south, with Big Bear and Birch Springs exiting from the aquifer at the contact of the Star Point Sandstone. Mr. Montgomery theorized that the northern portions of Co-Op's mine workings had intersected the potentiometric surface, and that the removal of substantial quantities of this water through

mine dewatering had reduced current and future supplies to the Water Users' springs.

44. Co-Op's experts Messrs. Garr and White instead theorized separate aquifers in the Star Point sandstone rather than a single regional aquifer. They relied upon drilling in the mine that had established the existence of shale tongues interlineated between the three members of the Star Point sandstone. They testified that these shale tongues were generally impervious, and created essentially separate aquifers with separate potentiometric surfaces in each of the three sandstone members. Because the two disputed springs were supplied only from the lowest member, the Panther, any intersection between mining and the potentiometric surface of the separate aquifer in the upper Spring Canyon member would not affect spring flow.

45. While the Board recognizes that the evidence before it on this issue is not as clear as that concerning mining in the Tank Seam, it is ultimately convinced that Co-Op's hydrologic model is more convincing. As more fully set forth below, the Board believes that Co-Op's model is linked more closely to local conditions, and is supported by radiologic and chemical analyses establishing dissimilarities between mine waters and waters emanating from the two springs.

46. In preparing the PHC, Earthfax conducted tritium testing of waters encountered in the mine and flows from the two springs. Tritium is an isotope of hydrogen that was released

into the earth's atmosphere during open-air nuclear testing in the 1950s and 1960s. Tritium testing can be used to determine the "age" of water, because water that has been underground since before the nuclear era will have only small amounts of tritium, while new water exposed to fallout will have higher levels. **T. 287-288.**

47. Tritium testing of water encountered in the mine showed that it was "old" water with low concentrations of tritium, while water from Big Bear Spring had tritium concentrations approximately ten times greater. **T. 247, T. 288.** This data indicates that Big Bear spring has a source different from the water encountered by Co-Op in the Blind Canyon seam. **T. 288.** While Mr. Montgomery speculated that higher tritium levels in Big Bear Spring could be caused by water seeping across surface formations prior to being tested, the Board does not find this testimony convincing.

48. Tritium testing did not rule out similarity between the mine water and waters tested from Birch Spring, as both waters were found to be "old" water. **T. 247-248.** However, chemical analysis of the mine water and water from the Birch Springs showed chemical dissimilarities between the two waters, particularly in the area of sulfate content. **T. 290, 299-300, 304-306; Exhibit C, p. 2-19.** The Water Users countered that higher levels of sulfates could be the result of spring water being affected by surface mineralization.

49. The Board also concludes that the evidence linking

declines in flows at the two springs to activities in the mine rather than the extensive drought Utah has suffered in recent years was unconvincing. For example, the Board notes that the Water Users' witness Darrell Leamaster, a civil engineer and District Manager of petitioner Castle Valley, acknowledged that high flows of up to 230-240 gallons per minute from Big Bear Spring in the 1983-1984 time period were linked to wet weather at the time. **T.79, 97.** Similarly, Exhibit 15, relied upon by the Water Users, appears to show a response in flow from Big Bear spring to high precipitation in the early 1980s. For Birch Springs, actual flow data was limited to several years. **See Exhibit 16; T. 338.** Testimony about higher flows when the spring was reworked may lack relevance, since the testimony concerned the high water years of 1983-84. **T. 58.**

50. Testimony by the Water Users' witnesses also focused on anomalous flows in Big Bear Spring in 1991, coupled with spikes in sulfates and calcium concentrations. **Exhibit 18; T. 147-148.** Co-Op's witness Mr. White disputed any causal connection between activities in the mine and these flows. **T. 327.** The Board does not believe that either side's evidence on this issue is dispositive.

51. The Water Users attempted, over objection by Co-Op, to present Little Bear Springs as a "control." Little Bear Springs is located across Huntington Canyon from the two subject springs and the Bear Canyon Mine, and so could not be affected by mining activity. The Water Users argued that, although part of the same

regional aquifer, it did not show the same decline in flow as Big Bear and Birch Springs, and so was probative of whether flows from the latter two springs had been affected by mining. The Board is convinced by Co-Op's expert testimony that the regional aquifer system in the mine area is complex, and that the hydrology of springs in the area is sufficiently different that they are generally not analogous. **T. 208, 215-216.** The Board also notes that even the U.S.G.S. report relied upon by Mr. Montgomery cautions against comparisons between springs in the area due to differing geology. **T. 216.** Accordingly, the Board finds that Little Bear Spring is not useful as a control in this matter.

52. In summary, the evidence establishes that:

(a) Tritium analysis establishes that Big Bear spring and water encountered by Co-Op during mining are not of the same age, and thus hydrologically distinct;

(b) chemical analysis supports, although it alone does not conclusively establish, the conclusion that Birch spring and the mine water are hydrologically distinct;

(c) the existence of the Blind Canyon fault between the mine and Birch spring would preclude waters encountered in the mine from reaching Birch spring;

(d) Co-Op's more-localized hydrologic model supports the conclusion waters encountered in the Bear Canyon mine from perched aquifers and/or the Spring Canyon member of the Star Point sandstone are hydrologically distinct from the springs, which issue from the Panther member of the Star Point sandstone.

53. The Board therefore finds that based upon the evidence before it, Co-Op's mining of the Blind Canyon seam is not likely to cause material damage to the hydrologic balance in the mine area, and is not linked to declines, if any, in spring flows from Big Bear and Birch Springs.

CONCLUSIONS OF LAW

1. Pursuant to Utah Code Ann. § 40-10-11(2), Co-Op has the burden of affirmatively demonstrating the following:

(a) that the permit application is accurate and complete, and that all statutory and regulatory requirements have been complied with;

(b) that reclamation can be completed as required by law and the proposed reclamation plan; and

(c) that the assessment of the probable cumulative impact of all anticipated mining in the area on the hydrologic balance has been made by the Division, and the proposed operation of the same has been designed to prevent material damage to

the hydrologic balance outside the permit area.

2. The feasibility of reclamation and the adequacy of Co-Op's reclamation plan, a required showing under Utah Code Ann. § 40-10-11(2)(b), has not been challenged in this proceeding, and is not an issue here.

3. The Board concludes that the permit application was in fact complete, and that the requirements of the Utah Coal Mining and Reclamation Act and associated regulations have been complied with. The Water Users argue that the permit application is incomplete, and not in compliance with law, because the document incorporating the Division's determination of Probable Hydrologic Consequences allegedly does not include baseline data. Utah Code Ann. § 40-10-10(2)(c) requires a Division determination of the probable hydrologic consequences of mining operations. Such a determination was in fact made and approved by the Division. See Exhibit C. The Water Users contend that Co-Op's permit application does not comply with Division Rule R645-301-724, which requires baseline information concerning groundwater hydrology, because Table 2-5 of the PHC indicates that flow rates for the subject springs were not measured at the inception of mining. The Board is convinced that this omission is harmless. The Cumulative Hydrologic Impact Assessment (Exhibit D) for the proposed Significant Permit Revision contains the exact baseline information for the flow from these springs that the Water Users claim is absent. **Exhibit D, p. 2-17, Appendix D.** The absence of

this information from one table in the PHC when it is present in another portion of the permit application package is not significant. Utah Code Ann. § 40-10-11(2)(a) has been satisfied.

4. At the hearing in this matter, the parties disputed whether the possible effects of mining in the Blind Canyon seam should have been considered by the Division in ruling upon the Significant Permit Revision application. Co-Op's application for Significant Permit Revision involved only a proposal to mine the Tank Seam. Co-Op's current operations in the Blind Canyon seam are authorized under the terms of Co-Op's existing permit, which has not been challenged in this proceeding. The principal issue of law before the Board is whether possible negative hydrologic impacts of operations in the Blind Canyon seam should be considered here, or whether only impacts from mining in the Tank Seam may be considered.

5. If only the subject matter of the Significant Permit Revision application is to be considered, it is clear that Co-Op has met its burden of demonstrating that material damage to the hydrologic balance will not occur from mining in the Tank Seam. The great weight of the evidence showed that the Tank Seam was well above the regional aquifer theorized by the Water Users, that it was essentially dry, and that any effect that such mining would have by either limiting the downward flow of water or allowing contaminants into the hydrologic system was purely speculative.

6. One significant fact is that even if the Board were to

deny Co-Op's application for a Significant Permit Revision, mining could continue in the Blind Canyon seam under Co-Op's existing permit. The Board therefore does not believe that it is relevant to consider the hydrologic impacts of existing mining in the permit area. Nonetheless, because the bulk of the evidence presented by the parties focused on cumulative impacts of all mining, the Board has made factual findings on this issue. The Board has found that the factual evidence does not support the conclusion that the continuation of Co-Op's previously authorized operations in the Bear Canyon mine will cause material damage to the hydrologic balance.

7. Co-Op presented a hydrologic model that appears to the Board to better describe local conditions than the model presented by the Water Users. Radiologic and chemical analysis appears to differentiate water found in the mine from water at Big Bear and Birch Springs. The Board simply has not heard convincing evidence that declines in flows at the two springs have resulted from mine dewatering instead of the drought conditions of recent years. The Board therefore concludes that the requirements of Utah Code Ann. § 40-10-11(2)(c) concerning material damage to the hydrologic balance have been satisfied.

8. At the hearing, the Board took under advisement Co-Op's motion to exclude evidence of damage to the Water Users' springs that took place prior to 1991, the date when Co-Op's mining permit for the Bear Canyon mine was last approved. Co-Op argued that the Water Users were collaterally estopped from raising

issues that had been raised and readjudicated before the Board and Division in the 1991 proceeding. The Board has chosen to consider all evidence before it concerning alleged damage to the Water Users' springs, and accordingly denies Co-Op's motion.

9. The water replacement requirements of 30 U.S.C. § 1309a are not applicable under the circumstances. That statute, which was enacted as part of the Federal Energy Policy Act of 1992, requires the operators of underground mines to replace promptly any water supplies adversely impacted by underground mining operations. The Water Users have failed to prove to the Board as a factual matter that either the quantity or quality of their water has been adversely impacted by mining at the Bear Canyon mine, so the statute may not be applied to Co-Op here.

10. In addition, the Board does not believe that a permit revision appeal such as this one is the proper forum for raising the federal statutory water replacement requirement. The Utah legislature has yet to incorporate the water replacement requirement for underground mines into the Utah Coal Mining and Reclamation Act. See Utah Code Ann. § 40-10-1 et seq. The Board questions whether it has jurisdiction under the Utah act to require water replacement pursuant to 30 U.S.C. § 1309a. This proceeding for review of a Division permit decision simply is not the proper forum for the Water Users' water replacement claims.

11. The Board finds that, under the circumstances set forth above, no attorneys fees, costs, or expenses should be awarded in this proceeding pursuant to Utah Code Ann. § 40-10-22(3)(e).

ORDER

IT IS THEREFORE ORDERED that Petitioners' appeal is denied, and the Division's action approving Co-Op's Application for a Significant Permit Revision is upheld. No costs, expenses or attorney's fees are awarded.

ISSUED & SIGNED this 13th day of June, 1995.

STATE OF UTAH
BOARD OF OIL, GAS & MINING

Dave D. Lauriski
Chairman

Approved as to Form:

John W. Andrews
Assistant Attorney General